Sanitized Copy Approved for Release 2010/03/26 : CIA-RDP80T01137A000200060058-0

25X1

~~TOP SECRET~~

25X1

31 January 1968

Copy 3

MEMORANDUM FOR THE RECORD

SUBJECT: Visit of [redacted] United States Department of Agriculture, Agricultural Stabilization and Conservation Service (USDA/ASCS) 25X1

1. [redacted] USDA/ASCS, visited TSD/TSSG 30 January 1968 in connection with project ARGOS which is the code-name for the "Peaceful Uses of Satellite Photography" project. [redacted] is a member of the panel which NPIC hosted for a two week orientation period, and that TSD personnel briefed on certain camera systems. 25X1 25X1

2. [redacted] was interested in TSD's views on mensuration accuracy as they applied to two distinct problems in the field of agriculture: 25X1

a. Part of USDA/ASCS's mission is to acquire and compile accurate data on domestic farm acreage in connection with certain USDA policies of price supports. ASCS makes measurements on six inch focal length mapping photography and on the basis of these measurements, a farmer is assigned an official acreage for his fields. [redacted] said that the accuracy requirements were 1% for any side of the field and 2% for the acreage. He wanted to know if the same accuracies could be attained from satellite photography. 25X1

b. The second area of interest concerned USDA interest in "emerging nations" or "underdeveloped" nations. For purposes of regional planning, [redacted] wanted to know if we could meet 10% accuracy requirements in area measurements. 25X1

3. Before replying specifically to [redacted] questions, it was necessary to generally state our present repetitive or pragmatic approach to accuracies, and to discuss in general terms a possible method of theoretical error determination by error propagation. We also talked over the inter-action of system vs. resolution error, error 25X1

25X1

GROUP 1
Excluded from automatic downgrading and declassification

~~TOP SECRET~~

SUBJECT: Visit of [redacted] United States Department of Agriculture, Agricultural Stabilization and Conservation Service (USDA/ASCS)

of a point in a local system, error of the distance between two points, error of an area, and the significance of the term sigma in discussing various accuracy statements. It was pointed out to [redacted] that to our knowledge very little work has been done in this field either at NPIC or elsewhere and that many of the ideas presented during our discussion were personal "intuitive" feelings which could not be substantiated at this time.

4. In answer to paragraph 2a, [redacted] was told that it was probably not feasible to expect a 1% accuracy for distances or a 2% accuracy for areas at this time to any degree of confidence. It would be possible to produce from our files many measurements of the Phoenix Test Range which do achieve accuracies better than 1% but our statistical base (sample size) would be suspect. In other words even though we may achieve 1% accuracies, we could not estimate if we could achieve them at a 1 sigma (67%), 2 sigma (95%), or 3 sigma (99.7%) value.

5. In answer to paragraph 2b, [redacted] was told that in TSD's opinion we could measure to a 10% accuracy in area at a 2 sigma (95% of the time) value. It was re-emphasized to [redacted] that this was personal opinion and we had no statistics to back this claim.

6. Two methods were suggested by TSD that might increase the value to USDA. First, the use of stereo was suggested since, in effect, any distance would be obtained from two photographs and any pointing irregularities should be improved by stereo viewing. Second, if an error analysis routine were developed, it could predict and flag all area values that exceeded USDA accuracy requirements.

7. [redacted] is planning to discuss the problem further with his group and it's quite possible he will require more assistance from TSD.

[redacted]

NPIC/TSSG/TSD

Distribution:
cy 1 - project folder 22346-7, TSSG/TSD
2 - TSD/chrono
3 - NPIC/Office of Director [redacted]

[redacted]

TOP SECRET